

CDM

environmental engineers, scientists,
planners, & management consultants

CAMP DRESSER & McKEE INC.

3445 Executive Center Drive, Suite 220
Austin, Texas 78731
512 345-6651

April 14, 1986

✓ Mr. John Cochran
U.S. Environmental Protection Agency
First International Building
1201 Elm Street
Dallas, TX 75270

Doc. Ctrl. No. 143-TS1-EP-CLVJ-1

RE: South Cavalcade Street; Weekly Compliance Monitoring Report

Dear John:

Enclosed are summaries of compliance monitoring activities and field notes for compliance monitoring at the South Cavalcade Street Site for March 24 through 28, 1986, and March 31 through April 4, 1986.

Sarah Landtiser's summary memo contains several observations and comments. Three of the observations and comments relate to decontamination procedures and health and safety at the site. I urge you to look into the problems described by Sarah.

Sarah's fourth comment probably falls outside of the scope of our work, and you can ignore it or pass it along to Koppers Company as you see fit. From EPA's perspective, I see two and possibly three areas of concern:

1. Having only one individual operating the drilling rig does not appear to me to be a safe practice, neither for that individual nor for others working near the rig.
2. Should less than professional attitudes displayed by site personnel deteriorate to action, EPA might find itself in an untenable position.
3. Less than diligent pursuit of the remedial action tasks requires that CDM remain in the field longer than necessary, increasing EPA's and, ultimately, Kopper's costs.

I had Mike Young, the other CDM person performing the bulk of the compliance monitoring at the South Cavalcade Street Site, review Sarah's memo for agreement with his own observations. Mike concurred with Sarah in every respect. I am assured, and I assure you, that the comments and observations made by CDM are not the result of interfirm rivalry nor are they based on problems CDM has encountered with McBride-Ratcliff at another site. The issues we have raised are of genuine concern and are documented in the field notes we have provided you.

084

002375

CAMP DRESSER & MCKEE INC.

Mr. John Cochran
April 14, 1986
Page Two

Although I have been told that we have received copies of field notes prepared by McBride-Ratcliff personnel, I have not yet seen them.

As you requested, copies of the summary and notes are enclosed for transmission to Koppers.

Sincerely,

CAMP DRESSER & MCKEE INC.

Robert S. Kier
Robert S. Kier
Site Manager

RK:tp

002376

Memorandum

Date: 4/4/86

To: Files

From: Sarah A. Landtger

Re: South Cavalcade Compliance Monitoring

During the week from 3/31/86 through 4/4/86 I monitored field activities at the Koppers South Cavalcade job. Four boreholes were completed. On 4/1/86 the drilling rig was being repaired. The boreholes are summarized below:

<u>Borehole No.</u>	<u>Date Drilled</u>	<u>Total Depth</u>	<u># Samples</u>	<u>Remarks</u>
SEK-A04-SB09	3/31/86	66'	33	no odor, no visual
SEK-A04-SB10	4/2/86	58'	30*	1. slight HC odor fro. 2'-4', no visual
SEK-A26-SB01	4/3/86	58'	28	trace of treated wood. - faint odor & slight visual
SEK-A27-SB01	4/4/86	60'		no odor, no visual

* includes duplicate

I have the following comments to make:

- 1) Several drums within and outside of the secured area are left either uncovered or the lids are not clamped on, allowing possible overflow of drums should rains occur. This was brought to the attention of MRA employees, Bruce Urban on several occasions with little to no results.

002377

- 2) Thoroughness of decon procedures could be improved upon. Split spoons or Shelby tubes are commonly placed on the ground after they have retrieved sample and before opened & samples are extended. Chances of cross-contamination occurring are probably quite small, however, this is not a good habit and when a very contaminated hole is encountered it would be possible to cross-contaminate.
- 3) In several occasions an H&E is not available for use. Breathing zone readings are never taken at specified intervals as they are done religiously in Texarkana.
- 4) Perhaps this next comment is beyond the responsibilities of compliance monitoring, but I would like to make it anyway. The driller, B. VanAntwerp of Van and Sons is predominantly working behind the rig alone. His helper is tied up decontaminating tubes and/or spoons between samples. This situation is potentially very dangerous. Another helper is needed, whether it be from MRA or Van and Sons is insignificant. This situation is not only dangerous but it is also slowing down operations considerably.
- I observed B. Urban, MRA without anything to do or without motivation to do whatever it is he is supposed to be doing. On several occasions he was asked to assist decontaminating, he did once for 20 minutes. To be frank, he does not care

002378

about the job he is doing. This is substantiated by his remarks as well as his actions. In my opinion, his ~~presen~~ presence on this site creates a bad situation. It is apparently his responsibility to make sure drums are collected and sealed up. His performance on this task is clearly insufficient. He (perhaps jokingly) remarked that he should just "shoot the" (decon water holding) "tanks"... and "let the water run all over the ground" to get some attention from his superiors to get things done, i.e., get more drums/storage tank space. An attitude such as this is far from professional and has no place on a hazardous waste site.

It is very unfortunate that drilling operations are proceeding at one hole per day. If MRA was more willing to work a few hours of overtime ^(onsite) and/or designate two capable onsite personnel, I am confident two deep holes per day would be quite easy, and with Health and Safety considerations in mind, unnecessarily extending this job into the summer's heat would be foolish.

SA

002379

102

3-27-86

Soil Boring SCK-A04-SB08 continued

Depth	Description	Comments
1127: Headspace	on sample SB08-11 = 0.5 ppm	
31'-33'	18" recovery, push Shelby tube	
	red brown clay - slickensided, no odor	
1053: SAMPLE: SCK-A04-SB08-12	depth = 32.5'	
1127: Headspace	on sample SB08-12 = 0.5 ppm	
33'-35'	12" recovery, push Shelby tube	
	same as above, slickensided, no odor	
1102: SAMPLE: SCK-A04-SB08-13	depth = 34'	
1128: Headspace	on sample SB08-13 = 0.5 ppm	
35'-37'	12" recovery, push Shelby tube	
	35-35.5 same as above	
	35.5-36 gray-tan sandy clay w/ orange staining, no odor	
1125: SAMPLE: SCK-A04-SB08-14	depth = 36'	
1128: Headspace	on sample SB08-14 = 0.5 ppm	
1130: Below and leave site to notify SMO of CLP shipment, check out of hotel, complete paperwork and packaging for CLP samples, and drop at CLP shipment at FEC.		
1200: Call SMO: talk to Sena Kolb and give CLP shipment info.		
1300: Complete shipment at FEC.		

M. J. [signature]

103

3/31/86

0000 Depart Austin Wx: partly cldy, 70's; S breeze
1000 SCK A04-SB09 arrive

drilling in progress @ ~17'

ST: Shelby tube, SS: split spoon

DEPTH	DESCRIPTION	REMARKS
18'-20'	CL-MC clay & silty clay	no odor
push	red clay and grey white	no vis.
SS	silty clay, moist, stiff	into [unclear]

SCK-A04-SB09-10

20'-22'

push

ST

SCK A04-SB09-11

22'-24'

push-ST

-A04-SB09-12

24'-26'

push-ST

A04-SB09-13

CL-red clay slightly silty in
grey mottled, slickensided
hard, dry

no odor

no vis.

CL red clay & grey silt
mottled, plastic, moist
v. plastic, moist

no odor

no vis.

CL red clay, some
grey silt, hard, dry
slickensided

no odor

no vis.

Bruce Urban brings cement w/ forklift
drums being used for cuttings are lined w/
heavy plastic. MKH Geologist doing
headspace on samples. And set on

SA/Tanher 3/31/86

002380

104

0-200 gms scale, no deflections are being noted, only a background of 0.5. Breathing zone reading taken 1037 H₂O=0.5. Samples placed in ice chest with blue ice.

1040 sample in ST being prepared for extrusion. Approx. .4' @ top of sample is removed with small hand auger. A reusable (not deconned) cloth is placed in top, sample is placed on extruder, then extruded onto deconned split section of PVC.

Note, number in (+) is depth that sample is labeled

DEPTH	DESCRIPTION	REMARKS
26'-28'	CL - same as above	no odor
push ST	with slightly more silt	no vis.
104-5809-14 (27.5')	1.5' sand parting	

23'-33'	CL - mod. plast, same as above	no odor
push ST		no vis.
104-5809-15 (29.5')		

100	Bruce Urban arrives / drum	
30'-32'	CL red grey clay, hard	no odor
push ST	dry, some slickensides	no vis.
104-5809-16 (31')	no obvious clay or silty partings	
J.A. Lanthier 3/31/86		

105

Bruce Urban arrives / drum
1100 Bruce Urban leaves

1112

32'-34'	CL - red clay, grey	no odor
push ST	silty clay, mottled, dry	no vis.
104-5809-17 (33.5')	hard, some calcified zones	

all samples that are taken come from bottom ~.3' after end has been trimmed. It should be indicator of last half foot of horizon.

— slight variation in lithology here —

34'-36'	CL grey (greenish) red	no odor
push ST	clay, hard, dry	no vis.
104-5809-18 (35.5')		

36'-38'	CL - GML greenish grey ad	no odor
push ST	orange yellow silt	no vis.
104-5809-19 (37.5')	mod. plastic, dry	
	stiff, friable 5' somewhat crumbly	

38'-40'	ML same as above	no odor
push ST	except moist, less	no vis.
104-5809-20 (39.5')	clay, slightly silty (v.f.)	
J.A. Lanthier 3/31/86		

002381

DEPTH	DESCRIPTION	REMARKS
40-42	SP SM silty sand, orange	no odor
push 51	clay (cohesive) grey	no vis.
A04-5809-21 (41')	fine, moist.	
1203	Burden arrives talks to W. T. T. 1210	leaves
42-44		
push 51	SP of sand, orange (20%)	no odor
A04-5809-22 (43')	silt, no clay, grey s/	no vis.
	orange for tubes, v. moist	
(11-42) 45.5'		
BC: push/10/50-55	orange as above	no odor
A04-5809-23 (45.5')		no vis.

1210 head of air readings on samples
#14 thru 22, sample 21 & 22
Turner checks instrument with tanks & lot
instrument kept, suits for it to
recover and resumes taking readings
- all samples requested 0.5 on 11/10

1212 breathing zone breathing 0.5
samples put in cooler

46-47.5
46-48 (45.5-47.5) SP of sand, grey, moist
BC: push/4555-55
A04-5809-24 (47.5')

J. A. Lanthier 3/31/36

Notes: • SS are 15' in length, with ends
trimmed max. recovery is ~ (10-15")
• ST are 20' in length with ends
trimmed max. recovery is ~ 1.5' (10-15")
• hammer is standard 140# 1/30" drop.
• rig is a Mobil 53, new paint looks
very clean and runs smoothly
• second is with (H2O + TIDE detergent), possible
water rise, methanol rise, first possible
water rise.
• with SS samples, sample (10') is
retrieved deeper to next hole number
and another sample is taken: 0.5'
of sample is not retrieved.

48-49.5
BC: push/10/50-55
A04-5809-25 (49.5')

50-52
push 51
A04-5809-26 (51.5') SP of sand, grey, slightly moist
sand (w/ silt)

J. A. Lanthier 3/31/36

DEPTH DESCRIPTION REMARKS

1247 *fracture in wire talks w/ w. Turney*
 1255 *BU leaves*

52-54 *SM sandy (f) silt* no odor
trace clay (cohesive) no vis.
moist, grey

54-56 *SM sandy silt* no odor
with clay (20%) no vis
moist, grey

1324
 56-58 *56-57.7 SD silty sand (f) red* no odor
grey, dry, no vis.
 104-5809-29(58') *57.5-57.9 sand w/ about w/*
small (<1mm) red clay fragments
(all) clasts throughout - no odor
57.7-58 LL red clay, stiff, dry

1334 *headspace readings taken on samples*
 23-29 *H₂O: 0.5 on all*

1336 *breathing gone H₂O: 0.5*

SA Lanthier 3/31/06

DEPTH DESCRIPTION REMARKS

58-60 *CL- clay red w/* no vis.
pink ST no odor
 104-5809-30(59.5') *grey, w/ sand pockets*
thickened, stiff, dry

60-62 *CL silty* no vis
CL clay-red, moist (slight) no odor
mod. plastic, slight
 104-5809-31(62') *grey, moist, soft stiff*

62-64 *62-63 ML silt, red, v. moist* no vis
pink ST no odor
 104-5809-32(64') *some clay, soft (as above)*
 63-65' *CL- clay-red, stiff*

64-66 *CL clay-red, stiff, dry* no vis
pink ST no odor
 104-5809-33(65.5') *with grey sand (f) silt*
parting

TD = 66'
 1412 *crd begins to spic grad*
Bellman wires, picking up drums
decom water is poured into
drums with cuttings. 3 drums
used for cuttings here
 1415 *w. Turney finishing up head space*
(H₂O) readings - all 0.5 ppm

SA Lanthier 3/31/06

this hole SCK-A04-SB09 is located approximately 700' S of Southern Transition fence and 30' W of gravel road leading to secured-MRA area.

- pump on rig is used to mix up grout. B. Urban tells me grout mixture is approximately:

10 gallons H₂O
2 bags (100#) cement (Portland Type I)
 $\frac{1}{2}$ - $\frac{3}{4}$ bag (94#) bentonite gel

- no sample of grout mixture saved, but chips from bottom of drum that had set up appear adequate.

1450 decom and leave site to check into a hotel & make phone calls

4/1/86 Wx: humid, warm 70's, broken clouds, calm

0800 arrive site crew setting up equipment

0805 leave to make phone calls

0835 return site, crew setting up on A04-SB10

go over to yesterday's boring A04-SB09 level grout 3' below ground surface

S. J. Canessa 4/1/86

0850 location of A04-SB10

N 30' N of northern boundary of MRA secured area and N 10' E of N's gravel road.

0905 begin drilling

DEPTH	DESCRIPTION	REMARKS
0-2	CL dark brown	no vis
pink ST	sandy clay w/ gravel & sand	no odor
sec. 7	plant roots	

0906 hydraulic line hose busted, disassembled and crew goes to get replacement to site to make phone call.

1130 arrive site

driller's helper tells me rig will be down the remainder of day

1430 depart site

S. J. Canessa 4/1/86

112

4/2/36

Wx.

broken clouds, Temp. 70.5°F, S. wind ~15 mph
20% chance of thunderstorms

0745 arrive site at Turney getting eq. up together

0756 shells arrive site

0810 begin setting up on hole

Heavy liquid Delquent used as lubricant for auger / head connect.

0825 begin A04-SB10 Core regard sample taken 4/1/36. This location is approx. 3' S. of yesterday's location

NOTE: NO OIL/NO AROUND

DEPTH	DESCRIPTION	REMARKS
0-2	CL sandy clay, (fill)	no odor
recor. 1'	with rock and shell, fill	no vis.
BC: push-ST	frag. gravel, plant	extreme frag.
A04-SB10-01(1')	rocks, clay, brown-black	-slay prot.
2-4	SM clay, sandy silt,	
recor. full 2'	rock frag, roots	v. slight if color
BC: push-ST	slight mist	no vis.
A04-SB10-02(4')	thin-black	

Turney stops sampling brief and is careful

SA/withina 1/2/36

113

about re-dearing it, even tho it's still not clean

DEPTH	DESCRIPTION	REMARKS
4-6	SM sandy silt, clay	no odor
recor. full	sand pocket - burrow	no vis.
BC: push-ST	of crabs, mist,	
A04-SB10-03(6')	greyish brown	
6-8	SM clay, sandy (of) silt,	no odor
recor. full	mist, tight,	no vis.
BC: push-ST	dark grey & yellow-orange	
A04-SB10-04(8')	staining	
8-10	SM same as above	no odor
recor. full	slightly lighter in	no vis.
BC: push-ST	color	
A04-SB10-05(9.5')		
10-12	SM as above, moisture &	no odor
recor. full	sand content increasing	no vis.
BC: push-ST	with depth, predom.	
A04-SB10-06(11')	sand at 11.5' light	
	grey & dark grey & yellow nothing	

SA/withina 1/2/36

114

DEPTH	DESCRIPTION REMARKS	REMARKS
12-14	12-13 sm silty of sand grey w/ orange mottling moist	no vis no odor
recov. full BC push-ST A04-SB10-07(135)	13-14 CL sandy clay grey w/ red-orange mottling soft, moist	
14-16	14.3-15 CL w/ wet sandy sand	no vis.
recov. full 1.7' BC push-ST A04-SB10-08(15)	14.3-16 CL clay w/ comp sand, stiff, red-brown and grey	no odor
	15-16 CL clay, stiff, some sand, white-grey w/ red brown mottling	
16-18	16-17 CL slightly sandy clay, moist, light grey	no vis no odor
recov. full BC push-ST A04-SB10-09(18)	17-18 CL-mil silty sandy (v.f.) clay, dry, black, red-brown w/ grey	

S. A. Smith 1/2/56

115

OR30 down procedure on tubes is really pretty good altho' sometimes a small amt. of clay will remain on tube before after finished extender rod is covered in clay & not cleaned off between desc. - may be minor detail

DEPTH	DESCRIPTION	REMARKS
18-20	SM-CL sand, silty (40-50%) clay, dry	no vis. no odor
recov. 1.7' BC push-ST A04-SB10-10(19.5)	soft, slightly moist red brown w/ grey mottling	
20-22.5	SM clayey sand (v.f.)	no vis
recov. full 1.5' BC push 55 A04-SB10-11(21.5)	comp silt, moist soft, red brown w/ grey mottling, w/ small wet sandy packets	no odor
22-23.5-24	CL clay, stiff, dry, red-brown	no vis no odor
recov. 1.5' BC push-ST A04-SB10-12(23.5)	w/ some grey mottling	
	-68 (23.3) duplicate of -12-	
	874 m. d. 4/2/56	

002386

0950 extender rod being cleaned off - not completely though. base of sample has pieces of grass in it. the driller sets it on the ground after he pulls it up. - may be minor

0955 duplicate sample is not in the strictest sense a duplicate as it is taken just above the actual sample, so is a true duplicate sample should be split lengthwise and the right image becomes the duplicate. Turner says he's doing it as he was directed to.

DEPTH	DESCRIPTION	REMARKS
<u>24-26</u>	<u>CL</u> clay (red brown)	no vis
recon. 15	w/ silty clay (grey)	no odor
BC: push. ST	moderately firm	
A04-SB10-13(25.5)	dry, stiff	
<u>26-28</u>	<u>CL</u> - 24 above	no vis
recon. full. 21		no odor
BC: push. ST		
A04-SB10-14(28)		

St. Landrew 4/2/66

DEPTH	DESCRIPTION	REMARKS
<u>28-30</u>	<u>CL</u> (f. sandy (30.2))	no vis
recon. 15	dry, dry, stiff	no odor
BC: push. ST	red brown w/ grey	
A04-SB10-15(29.5)	nothing	
1008	merchants truck on site	
1010	MRA personnel on site for repairs (water leak?)	
1015	G. Urban arrives on site tells W. Turner no data will be available today	
<u>30-32</u>	<u>CL</u> clay, stiff, hard	no vis
recon. full	dry, somewhat blocky	no odor
BC: push. ST	red brown w/ grey	
A04-SB10-16(31.5)	stains / mottles	
1025		
<u>32-34</u>	<u>CL</u> as above	no vis
recon. full	with grey w/ sand	no odor
BC: push. ST	flattens, somewhat	
A04-SB10-17(34)	consolidated clay, slickensides	

St. Landrew 4/2/66

DEPTHDESCRIPTIONREMARKS

Note: driller is doing roughneck tasks at well, helps. Occasionally assists but is primarily securing tubes and connectors. - seems dangerous for driller to work alone. If B. driller was more efficient and helped doing down, driller should have a helper and operations would run safer and possibly faster.

34-36

near 1.8

BC push ST
A04-SB10-18(35)105036-38

near full

BC push ST
A04-SB10-19(31.5)

CL at 2 in. dia
slightly moist
moistened prob. from
hole or wet mud

no vis
no odor
|

36-37 CL at about37-38 CL ML

dry at about yd
slightly 2 in. and
lighter coloring
iron concentration, w/
wet sandstone?

no odor
no vis.

S. A. Lanithur 4/2/36

1100

driller asks if turning what
depth we are at - maybe if
he had a helper he could keep
better track - the driller should
know

DEPTHDESCRIPTIONREMARKS32-40

CL ML at about

no odor
no vis

near 1.5' - light gray w/ red brown

BC push ST
A04-SB10-20(40)1107

- outtings wet - sticky

40-42

near 1.5

CL ML

no odor
no vis.

BC push ST
A04-SB10-21

slightly clay at about
dry, shift
(41.5)

42-44

CL ML at about

no vis
no odor

near 2.0'

BC push ST

A04-SB10-22(43)

1120

I make comment to driller
he begins washing equip

S. A. Lanithur 4/2/36

120

DEPTH	DESCRIPTION	REMARKS
44-46'	CL-NL 22% moist, sand	no odor no vis.
reco. 1.5'		
BC: push 5T	perhaps (fss)	
A04-SB10-23(45.5)		
1190	urban leaves to meet pallet delivery	
46-48'		
reco. 1.5'	CL sandy (20%)	no odor
BC: push 5T	clay (30%)	no vis.
A04-SB10-24(47.5)	content seems to be increasing, grey w/ orange mottles, moist	
48-50'	SM v. clayey (40%)	no odor
reco. full	sand (10%) grey	no vis.
BC: push 5T	orange mottling	
A04-SB10-25(50)		

1158 HNU... arrived (10.2 Lp...)
W. Turner also has 30.24 and 21
samples taken that day
Oct. 24. only 01-10 21 0 p.m.

SALANDER 4/2/86

121

DEPTH	DESCRIPTION	REMARKS
50-52	CL (45% s.s.) (30%)	no odor
reco. 1.5'	clay red brown	no vis.
BC: push 5T	and green-grey mottles	
A04-SB10-26 (51.5)		
52-54	52-52.2 CL	no odor
reco. 1.8'	slightly sandy (10%)	no vis.
BC: push 5T	clay red brown and grey, dry, stiff	
A04-SB10-27(54')	52-53.8 NL-SM	
	clayey (20-30%) dry, light	
1220 Wx hot (80°)	partly cldy, s. breeze	
54-56 55.5'		
reco. - full - 1.5'	SM v. clayey, sandy (30-40%)	no odor
BC: push 5T	silt, moist, stiff	
A04-SB10-28(55.2)	mod. plastic.	

56-58 CL silty clay 10 vis
reco. 2.0' red-brown s.s. 20% no odor
BC: push 5T (58) grey mottling dry
A04-SB10-29(57.5) slickensides, calcareous
deposits.

ID:58'

SALANDER 4/2/86

122

1240 crew begins to set up to grout hole
 W. Turney finishes doing headspace on samples all #10-29 and #60 (duplicate) showed 0 ppm

1253

grouting hole then augers, auger pulled up a few feet, pulled up to auger flight removed, grout pumped thru auger, and continued. Augers are landed onto a pile on deck left, most all cuttings cleared off foot with they are still dropping some.

note: A26-5801 is 180' E, 15' N of NE corner of tower fence, Turney just measured it w/ tape.

1440

finish grouting hole, top off previous days two-foot hole

1500

too take photos #7, 8, 9, 10, 11, 12 of drums left unattended in various places on site, first sequence is outside secured area by A26-5809 today, second sequence is inside secured area. Don't understand why some

SA Landman 4/2/86

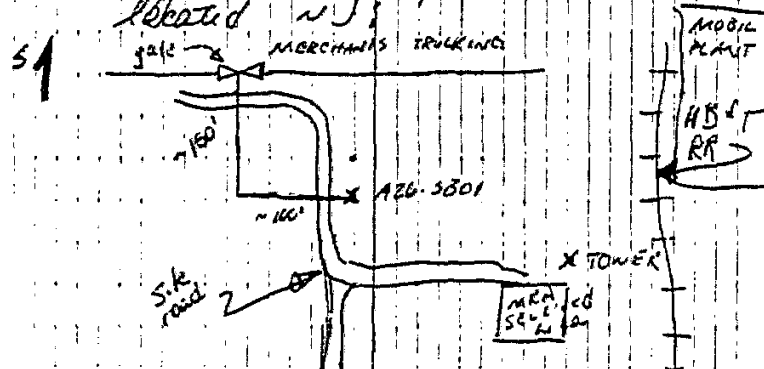
123

if these drums are left uncovered, a hard rain could cause overflow of contents and resultant spill. This state has been true since I arrived on Monday
 1530 depart site

4/3/86 2x overcast, hazy, cool (60s F), slight (5-10 mph) SE wind

0815 arrive site, crew loading up gear. Inspect augers and barrels. Reinspect small amount of dirt, the drill crew washed again. O.K.

0900 begin setting up on A26-5801 located NW



SA Landman 4/3/86

002390

124

0915 begin drilling AZ6-5801, 2 spurs & tubes
being examined & laid on new plastic ground cover

DEPTH	DESCRIPTION	REMARKS
0-2	CL, gravelly, sandy clay fill, dry, thick	slight west odor
recor 1'		1st wood frags
BC push-5T		treated wood encountered,
AZ6-5801-01(1')	shell frags	

(as drilling exposes slight odor of creosote noticeable, then dissipates.)

2-4	trash consisting of treated wood pieces and fill material	sl odor & vis. contain
recor: 0		
BC push-5T		
AZ6-5801-02(2')	no sample retrieved	
	(when auger hit hard timber, plugged it up then when hole advanced soft soft soil - we push out instead of up inside auger.)	

4-6	CL sandy (15%) clay, grey silt some green and orange Fe stains, dry, soft-stiff	no odor no vis
recor: 2'		
BC push-5T		
AZ6-5801-02(55')		

Note: no H&L onsite

SA Landthorn 4/3/06

125

DEPTH	DESCRIPTION	REMARKS
6-8	CL sandy (20%) clay, tan above	no odor no vis
recor: 1.5'		
BC push-5T		
AZ6-5801-03(7')		
1000	Wind picking up, gusts to 20+ mph (50-100)	
8-10	CL v. sandy clay, dry, stiff, grey to tan w/ orange mottles	sl odor & vis. relating only to these wood chips @ 8'
recor: 2'		
BC push-5T		
AZ6-5801-04(10')	wood chips near top	
10-12	SM sandy clay (10%) sand (w/ no odor)	
recor: 2'		
BC push-5T	moist, tight, tan to grey w/ few orange mottles	no vis
AZ6-5801-05(12')		
12-13.5	SM clay (20%) sand of v. moist, tight & soft, plastic, tan to grey w/ few orange mottles	no odor no vis
recor: full 1.5'		
BC push-5T		
AZ6-5801-06(13')		
14-16	SM clayey sand, wet, orange w/ tan & grey	no odor no vis
recor: 2'		
BC push-5T	14.5-15.5 CL clay, drier & light	
AZ6-5801-07(16')	grit tan w/ orange staining	

SA Landthorn 4/3/06

002391

DEPTH	DESCRIPTION	REMARKS
126		
14-16 (core 4)	15.5-16.0 clayey sand, dry, grey/tan and orange	no odor no vis
16-18	16-17 CL clayey	no odor no vis.
recov. 1.5'	sandy clay, moist, orange-red brown & grey mottles	
BC push-ST	17-17.5 SN silty sand, slightly moist, red brown & some grey mottles	
AZ6-SB01-08(17.5)	SA silty sand, some clay, v. slightly moist, tan/grey & red brown mottles	no odor no vis.
18-20		
recov. 1'		
BC push-ST		
AZ6-SB01-09(19')		
20-22	20-21.5 silty sand, clay content increasing w/ depth dry to v. slightly moist, red-brown and grey.	no odor no vis.
recov. 1.5'		
BC push-ST	21-21.8 CL slightly sandy (c10%) clay, red brown & grey mottles	
AZ6-SB01-10(21.5')		
1055		
22-24	CL clay, red brown & grey mottles, stiff, dry	no odor no vis.
recov. 1'		
BC push-ST		
AZ6-SB01-11(23)		

SA Alandier 4/3/86

DEPTH	DESCRIPTION	REMARKS
127		
24-26	CL as above	no odor no vis
recov. 2'		
BC push-ST		
AZ6-SB01-12(26)		
26-28	26-27.5 CL as above	no odor no vis.
recov. 2'	silt parting	
BC push-ST	27.5-28 SM ML clayey	
AZ6-SB01-13(27.5)	stiff, red-brown & grey mottles	
28-30	ML clayey silt & silt parting, dry, stiff, red-brown & grey	no odor no vis.
recov. 1.5'		
BC push-ST		
AZ6-SB01-14(29.5)		
30-32	ML silt with clayey silts, laminated root remnant, dry, stiff, red brown & grey	no odor no vis.
recov. 1.5'		
BC push-ST		
AZ6-SB01-15(31.5)		
1135	samples are placed in ice chest, I suppose this means no field headspace readings with the well be taken on these samples. Turney verifies.	
	SA Alandier 4/3/86	

002392

128

DEPTH	DESCRIPTION	REMARKS
<u>32-34</u>	<u>ML-CL</u> clay silt w/	no odor
recor: 2	clay lenses, silt (grey)	no vis.
BC push ST	partings and joint seams	
AZ6-SB01-16(34')	dry, predom. red brown & light grey mottled & pure white slickensides, stiff & blocky	
<u>34-36</u>	<u>ML-CL</u> clay with silt	no odor
recor: 2	(minor) seams, dry	no vis.
BC push ST (36.5')	red brown & grey, stiff	
AZ6-SB01-17(36')		
<u>1210</u>	MRA person arrives w/ Hrb, then leaves	
<u>36-38</u>	<u>ML-CL</u> silty clay, dry,	no odor
recor: 2	stiff, grey w/ red brown staining, ironstone (.1')	no vis.
BC push ST	zone @ 37.5 (black brown red concretions)	
AZ6-SB01-18(38')		
<u>1220</u>		
<u>38-40</u>	(109')	no odor
recor: 1.5'	<u>CL</u> sh. silty clay,	no vis.
BC push ST	dry, stiff, grey w/ yellow brown staining	
AZ6-SB01-19(39.5')		
<u>40-42</u>	<u>40-41</u> clay above	no odor
recor: 1.5'	<u>41-41.5</u> silty clay, silt	no vis.
BC push ST	grey & yellow staining dry.	
AZ6-SB01-20(41.5')		

E.S. Hatcher 4/3/86

129

DEPTH	DESCRIPTION	REMARKS
<u>42-44</u>	<u>ML</u> sandy clayey	no odor
recor: 1.5'	silt, moist, stiff,	no vis.
BC push ST	grey & yellow-brown mottling	
AZ6-SB01-20(43.5')		
<u>44-46</u>	<u>44-45</u> clay above, moist	no odor
recor: 1.5'	<u>45-45.5</u> CL sandy	no vis.
BC push ST	clay with calc. deposits and Fe concretions, blocky, dry	
AZ6-SB01-22(45.5')	red brown, black and dark grey	
<u>46-48</u>	<u>CL</u> sandy clay with	
recor: 2'	silty f. sand seams, dry	no odor
BC push ST	(black & yellow) throughout	no vis.
AZ6-SB01-23(47.5')	clay predom. red-brown calc. deposits & Fe concretions	
<u>1305</u>		
<u>48-50</u>	<u>CL</u> clay as above, red-brown,	no odor
recor: 1.5'	very blocky with	no vis.
BC push ST	blk grey & yellow silt band	
AZ6-SB01-24(49.5')	stiff, slickensides, stiff	
<u>50-51</u> @		
<u>1312</u>	headspace on samples #16-24	
	conducted w/ Hrb (102 cv) all shown	
	background = 0.5 Hrb = 0 ppm	

S. Hatcher 4/3/86

002393

132

1930 finish work at Highlands

4/4/86 wx: overcast, humid, warm, SE breeze (5-10 mph)

0800

go to AAA Pallet, deliver to Highlands (stopped by So Cal. site see *p135)

1100 arrive at off-site boring location (A27-SB01) located approx 30' E of Murray and approx 75' N of north fence of Mobil tank farm.

rig down due to hydraulic hose connector failure. 10 samples have been taken, all are without odor or visual contamination. A wet sand was encountered at ~12'

1120 walk over to secured MHA area across tracks. The drum situation has improved somewhat, however at least 5 drums have no covers at all, at least a dozen more are not clamped. A high wind could blow those covers off and rain could cause drums to overflow.

checked govt at A26-SB01, it
SA Landtress 4/4/86

133

needs to be topped off again. Tall orange storage tank where MHA has been storing potable water is being drained into the grain ground.

1130 return to off-site boring. It begins to rain.

1135 Antony returns with tools for rig
* (at 0840 I stopped by where I drilling crew was in vicinity of off-site boring and inspected augers & equipment, saw that was still on augers, thought it was not oily or contaminated visually.)

1330 rig repaired and drilling rig. Circumstances is taken to be deemed as hydraulic fluid got all over it. Drilling to commence after decon over.

1345 depart site, check out of hotel, go to airport

1645 arrive Austin

5 hrs. SCK

3 hrs. HIGHLANDS

SA Landtress 4/4/86

002394

130

DEPTH	DESCRIPTION	REMARKS
50-52	CL - clay, hard	no odor
rem: 2'	dry, red-brown w/	no vis
BC push ST	grey mottling with	
A26-5801-25(52')	blocky sandy silt clay zones, lenses & seams which are black grey, and yellow	

1325 I don't quite understand why it
continues drilling through the tight
clay, no contamination has been
encountered in the area thus far.
May not be my function, however,
seems that more holes could be done
over the same period of time. Also
Health & Safety guidelines seem to be
breached here - no breathing zone
readings taken at all. Not major
issue as these holes are showing up
clean, however no assurance that it
will be done in dirty areas. Driller
works above majority of time. Helper
is caught up with clean. Helper is
not specially careful with handling
of spoons, lays it against tire, on
ground etc. not critical at the

SA Landrum 4/3/86

Turney says we are looking
for lower silt.

131

is a clean hole, however, ~~hard shell~~
it should be a habit. Samples
are not screened with this as
they are opened not a conclusion
procedure but it is being
followed strictly in Texarkana.

DEPTH	DESCRIPTION	REMARKS
52-54	CL at above	no odor no vis.
rem: 1.5'		
BC push ST		
A26-5801-26(53')		
54-56	CL at above	no odor no vis.
rem: 2'	v. little sand/silt	
BC push ST	portion of blacky	
A26-5801-27(56')	texture	
56-58	CL at above	no odor no vis.
rem: 2'	freedom. hard clean clay	
BC push ST		
A26-5801-28(58')		
1930	mention to B. Urban that chums need cores	
ID 58'		
1500	depart site/hrs go to Highlands	

SA Landrum 4/3/86